

## PATENT COOPERATION TREATY

09/03/99  
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NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)Date of mailing (day/month/year)  
20 April 2001 (20.04.01)

From the INTERNATIONAL BUREAU

To:

HODGKINSON OLD MCINNES  
Level 3, 20 Alfred Street  
Milsons Point, New South Wales 2061  
AUSTRALIE

Applicant's or agent's file reference 2521 01	<b>IMPORTANT NOTIFICATION</b>
International application No. PCT/AU99/00921	International filing date (day/month/year) 22 October 1999 (22.10.99)

1. The following indications appeared on record concerning:

the applicant     the inventor     the agent     the common representative

Name and Address BRUCE WILSON SERVICES PTY. LIMITED 29 Carter Road Brookvale, New South Wales 2100 Australia	State of Nationality AU	State of Residence AU
	Telephone No. (02)99391300	
	Facsimile No. (02)99071400	
	Teleprinter No.	

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

the person     the name     the address     the nationality     the residence

Name and Address PROEM PTY LTD 29 Carter Road Brookvale NSW 2100 Australia	State of Nationality AU	State of Residence AU
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

3. Further observations, if necessary:

Please note the change of the name of the company in the addressee box.

4. A copy of this notification has been sent to:

<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned
<input checked="" type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	Authorized officer  Athina Nickitas-Etienne  Telephone No.: (41-22) 338.83.38
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## PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

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NOTIFICATION OF ELECTION  
(PCT Rule 61.2)Date of mailing (day/month/year)  
14 June 2000 (14.06.00)To:  
  
Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C.20231  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

International application No.  
PCT/AU99/00921Applicant's or agent's file reference  
2521 OIInternational filing date (day/month/year)  
22 October 1999 (22.10.99)Priority date (day/month/year)  
23 October 1998 (23.10.98)

## Applicant

WILSON, Monte, Bruce

1. The designated Office is hereby notified of its election made:

in the demand filed with the International Preliminary Examining Authority on:

23 May 2000 (23.05.00)

in a notice effecting later election filed with the International Bureau on:

\_\_\_\_\_

2. The election  was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Nestor Santesso

Telephone No.: (41-22) 338.83.38

REPLACED BY  
ART 34 AMDT

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**CLAIMS**

1. A leak detection composition for a refrigeration system comprising a fluorescent dye or other visible dye dissolved in or in suspension or emulsion in a solvent for said dye together with a refrigeration system lubricant.
2. A leak detection composition as claimed in claim 1, wherein the solvent comprises a mixture of fatty acid ethoxylate and alcohol ethoxylate.
3. A leak detection composition as claimed in claim 2, wherein the fatty acid ethoxylate is an ethylene oxide ester based on oleic acid.
4. A leak detection composition as claimed in claim 2, wherein the alcohol ethoxylate is cetyl oleyl alcohol ethoxylate.
5. A leak detection composition as claimed in claim 1, wherein the dye is a naphthalimide fluorescent dye.
6. A refrigerant composition comprising in combination a liquid refrigerant, and a fluorescent dye or other visible dye dissolved in or in suspension or emulsion in a solvent for said dye, whereby said refrigerant, dye and solvent comprise a uniformly homogenous permanent working composition.
7. A refrigerant composition as claimed in claim 6, further comprising a refrigeration system lubricant.
8. A refrigerant composition as claimed in claim 6 or claim 7, wherein the refrigerant is selected from CFC, HFC or HCFC, or a derivative thereof.
9. A refrigerant composition as claimed in claim 9, wherein the refrigerant is R134a.

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10. A refrigerant composition as claimed in claim 7, wherein the refrigeration system lubricant is selected from hydrocarbons including natural or refined mineral oils, synthetic hydrocarbons, alkylbenzenes, polyalphaolefins, synthetic polyalkylene glycols and polyolester lubricants.

11. A refrigerant composition as claimed in any one of claims 6 to 10, wherein the dye is a naphthalimide fluorescent dye.

12. A refrigerant composition as claimed in any one of claims 6 to 11, wherein the dye comprises from about 0.001 to about 0.1% by weight based on the weight of the dye per 100 grams of refrigerant.

13. A refrigerant composition as claimed in any one of claims 6 to 12, suitable for operation in a preselected mode including cooling, freezing, heating, ventilating and air conditioning.

14. A refrigerant composition as claimed in claim 13, wherein the air conditioning system is a motor vehicle air conditioning system.

15. A method of detecting leaks in a refrigerant system that uses in combination a refrigerant, a refrigerant system lubricant and a fluorescent dye or other visible dye permanently entrained therein, the method comprising the steps of:

- preparing a solution of the fluorescent dye or other visible diagnostic composition in a solvent suitable therefor
- adding a predetermined amount of the solution from the preceding step to a combination of liquid refrigerant and refrigeration system lubricant to form a stable

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refrigerant composition having the dye or other visible diagnostic composition dissolved or solubilized therein

- charging the hermetic refrigeration system with a predetermined amount of the refrigerant composition from the preceding step
- operating the charged system as and when required and determining the presence of a leak site by the presence of a coloured fluorescence or other visible coloration detectable by visual observation or with the aid of a lamp that produces light having an emission wavelength from 300 to 480 nanometers, directed at said refrigerant system.

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

REC'D 19 SEP 2000

WIPO

PCT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference  2521 OIP	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).	
International application No.  PCT/AU99/00921	International filing date ( <i>day/month/year</i> )  22 October 1999	Priority Date ( <i>day/month/year</i> )  31 October 1998	
International Patent Classification (IPC) or national classification and IPC  Int. Cl. <sup>7</sup> G01M 3/20, 3/22; C09K 5/04			
Applicant  BRUCE WILSON SERVICES PTY LIMITED (et. al.)			

<ol style="list-style-type: none"> <li>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</li> <li>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</li> </ol>	<input checked="" type="checkbox"/>	<p>This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 2 sheet(s).</p>
3. This report contains indications relating to the following items:		
I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application		

Date of submission of the demand  23 May 2000	Date of completion of the report  7 September 2000
Name and mailing address of the IPEA/AU  AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer  <b>GRAEME J. BROXAM</b>  Telephone No. (02) 6283 2133

**L Basis of the report**

## 1. With regard to the elements of the international application:\*

the international application as originally filed.

the description,      pages 1-12,    as originally filed,  
                              pages ,    filed with the demand,  
                              pages ,    received on    with the letter of

the claims,      pages ,    as originally filed,  
                              pages ,    as amended (together with any statement) under Article 19,  
                              pages ,    filed with the demand,  
                              pages 13-14,    received on 1 September 2000 with the letter of 1 September 2000.

the drawings,      pages ,    as originally filed,  
                              pages ,    filed with the demand,  
                              pages ,    received on    with the letter of

the sequence listing part of the description:  
                              pages ,    as originally filed  
                              pages ,    filed with the demand  
                              pages ,    received on    with the letter of

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

the language of publication of the international application (under Rule 48.3(b)).

the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, was on the basis of the sequence listing:

contained in the international application in written form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form.

The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4.  The amendments have resulted in the cancellation of:

the description,      pages

the claims,          Nos.

the drawings,        sheets/fig.

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU99/00921

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims 1-12	YES
	Claims	NO
Inventive step (IS)	Claims 1-12	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-12	YES
	Claims	NO

**2. Citations and explanations (Rule 70.7)****WO 98/54150 A (UNITED COLOR MANUFACTURING, INC.) 3 December 1998****WO 98/31752 A (MICROBIOMED CORPORATION) 23 July 1998****US 5421192 A (HENRY) 6 June 1995****US 4436641 A (STELZ) 13 March 1984**

None of the above documents discloses refrigerant compositions containing a) a non-CFC refrigerant, b) a UV fluorescent dye and c) a solvent for the dye that is neither the refrigerant or a refrigeration system lubricant, such that when in a pressurised gas storage cylinder, the three components are in a uniformly homogenous state. The claims of the international application are therefore novel and, in that they offer an advance over the prior art, inventive in the light of these documents.

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The description does not fully describe the invention because it broadly discloses an invention that cannot be distinguished from common general knowledge in the art. Amendments will be required to bring the description in line with the claims, which as a result of suitable amendments are now distinguishable from the cited art.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU 99/00921

**A. CLASSIFICATION OF SUBJECT MATTER**

Int Cl<sup>6</sup>: G01M 3/20, 3/22; C09K 5/04

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
G01M 3/20, 3/22, C09K 5/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Derwent Online Abstracts: (G01M 3/- or C09K 5/04 or F25 or refrigerant+ or coolant+ or aircon+ or (air and condition+) and (dye or indicat+ or detect+ or fluoresce+ or ultraviolet+ or uv) and (solv+ or dissolv+ or emuls+ or suspens+ or lubric+))

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	WO 98/54150 A (UNITED COLOR MANUFACTURING, INC.) 3 December 1998 See whole document, but especially pages 1-8.	1, 5-15
X	WO 98/31752 A (MICROBIOMED CORPORATION) 23 July 1998. See in particular discussion of prior art, pages 1-3.	1, 5-15
X	US 5421192 A (HENRY) 6 June 1995. See whole document.	1-15
X	US 4436641 A (STELZ) 13 March 1984 See whole document, in particular columns 1-10	1, 7-8, 12-14

Further documents are listed in the continuation of Box C

See patent family annex

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	earlier application or patent but published on or after the international filing date
"E" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document referring to an oral disclosure, use, exhibition or other means	"&"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document published prior to the international filing date but later than the priority date claimed		document member of the same patent family

Date of the actual completion of the international search  
14 December 1999

Date of mailing of the international search report

17 DEC 1999

Name and mailing address of the ISA/AU  
AUSTRALIAN PATENT OFFICE  
PO BOX 200, WODEN ACT 2606, AUSTRALIA  
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Authorized officer



GRAEME J. BROXAM  
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**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.  
**PCT/AU 99/00921**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report			Patent Family Member		
WO	9854150	AU	77083/98	US	5858930
WO	98/31752	AU	58184/98		
US	5421192	US	5357782		
US	4436641	US	4369120		

**END OF ANNEX**